

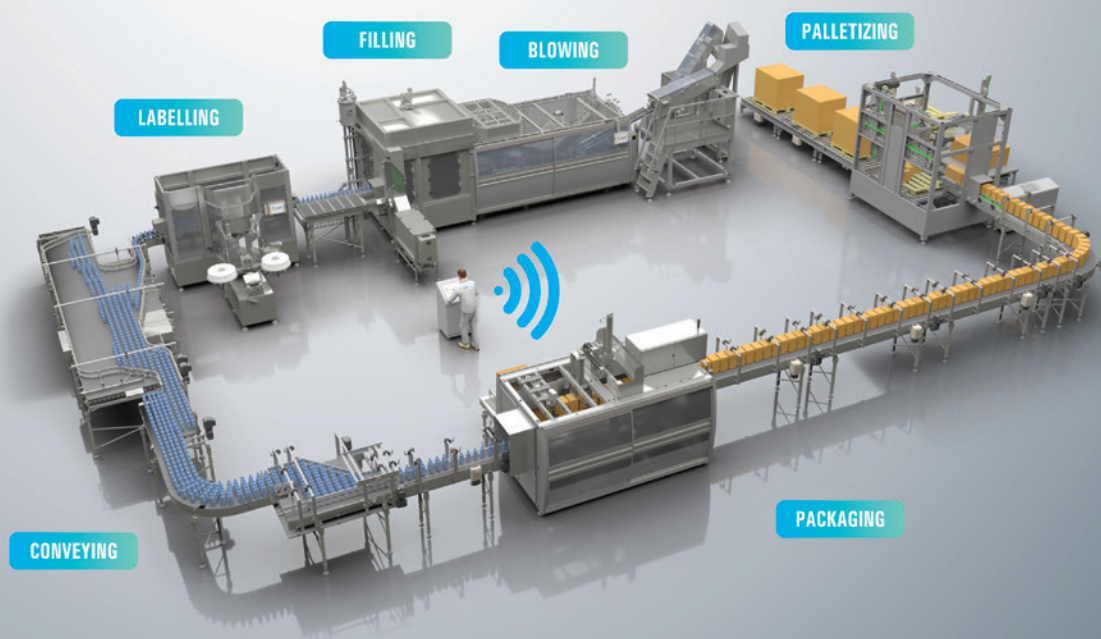
# DESIGN WITH US YOUR CIRCULAR PACKAGING



## IMPROVING YOUR CARBON FOOTPRINT IS EASY WITH SMI!

Our bottling and packaging systems benefit from Industry 4.0 and IoT technologies, can process recyclable materials such as rPET and allows for considerable energy savings.

Find out our solutions for packing a wide range of containers up to 50,000 bottles/hour.



# ECOBLOC® ERGON KL HC: Big bottles, *big savings*

With the integrated ECOBLOC® ERGON KL HC system proposed by SMI, the entire wet part of the filling line is grouped into a single system, which performs the functions of stretch-blow moulding, filling and capping



**P**roducing and filling PET containers with a large capacity of up to 10 L, all with a single machine, is increasingly the optimal solution for producers of mineral water and table oil. This compact and flexible solution offers numerous advantages in terms of reducing production costs, since the system does not require the presence of a rinser. In addition, the ECOBLOC® ERGON system, does not need conveyor belts between the blow moulding machine and the filler and the relative accumulation, thus guaranteeing a controlled and flexible production process. All this translates into greater efficiency, for the management of the entire wet part of the bottling line by a single operator on an extremely compact surface, while improving the

sustainability of production, thanks to reduced energy consumption. Compared to other integrated systems available on the market, the "combi" solution proposed by SMI offers a further advantage in terms of compactness of the structure, since the preform heating section and the stretch-blow moulding section of the machine are integrated into a single module.

**The space-saving design of the ECOBLOC® ERGON range:**

- Easily adapts to small bottling lines
- Reduces transport costs, because one container is enough to handle it
- Lowers installation and start-up costs, since these operations can be carried out quickly and easily in a few days of work.

**Green solutions for the primary packaging of high-capacity containers**

In the food and beverage sector, container design plays a decisive role in enhancing the brand and reducing the "carbon footprint" of companies, which, more and more often, use containers and packaging materials with reduced environmental impact during production, use and disposal.

The integrated ECOBLOC® ERGON KL HC systems are the ideal solution to produce and bottle liquid food and beverages at a maximum speed of 7,200 bottles / hour (depending on the characteristics of the container) in large containers, 100% recyclable, eco-sustainable, light and unbreakable, safe, with a

high degree of hygiene and suitable for preserving the properties of the product contained in them.

**Main advantages of ECOBLOC® ERGON KL HC systems:**

- The preform heating oven mounts a system of heat-reflecting panels in energy-efficient composite material, positioned both in front and rear of the infrared lamps responsible for heating the preforms. This system ensures a high reflection of the heat generated by the lamps and consequently ensures a more uniform distribution of heat over the entire surface of the preforms. An aluminium diffuser is also integrated inside the oven to ensure optimal temperature control and thus avoid overheating problems.
- The stretch-blow moulding section is equipped with an "AirMaster" two-stage air recovery system, which allows the basic air recovery system to be combined with a second circuit to recover and recycle part of the air coming from high-pressure blowing. This guarantees significant savings on the energy consumption of the compressor.
- The stretch-blow moulding unit is equipped with a motorised rod system controlled by an electronic drive and without the use of mechanical cams, for precise management of the stroke of the stretch rod, an accurate control of its position and considerable energy savings compared to traditional solutions. This system allows you

to change the stretch speed without mechanical intervention (replacement of cams).

- The mechanical group of the mould is equipped with its own motorization, which is responsible for performing with maximum precision the operations of ascent / descent of the bottom of the mould and opening / closing of the mould holder group.

- The machine adopts a system of high-performance valves and low dead volumes, which allows the reduction of energy and compressed air consumption. Optimisation of blowing cycles also ensures high operational efficiency.

- The insulation system between the dry area of the blow moulding machine and the wet area of the filler, guarantees the perfect separation of the two modules.

- The inlet of the filling product and the return of the washing product, take place in the lower part of the machine through a ceramic manifold equipped with double gaskets (one sealing, one safety), complete with inspection light. This leads to the net separation between "wet" manifolds (CIP product and return) and "dry" manifolds (electric and pneumatic), as well as high durability.

- The filling and capping modules have a modular frame, with no welding and equipped with access doors to the structure made of tempered glass, highly resistant and durable over time

- Filling module equipped with electronic gauges to ensure high filling accuracy.

- The areas of the machine, in contact with the product to be bottled, are entirely made of stainless steel and glass, for a high level of hygiene.

- The optimisation of the arrangement of the carousels inside the frame has made it possible to obtain reduced blind spots, to the advantage of the productivity of the plant.

- Quick format change of bottle guidance equipment.
- Filling module mounts dummy bottles with automatic insertion to ensure a quick product changeover and reduce operator intervention.

- Reduced maintenance and management costs of the plant.

**Eco-sustainable containers for large productions**

From the point of view of size, "high-capacity" containers, such as 5, 8 and 10-litre bottles, are arousing growing interest from companies in the beverage sector, that are attentive to "green" and energy-efficient solutions for their plants.

The use of large bottles, allows to bottle a certain volume of product in a smaller number of containers, thus reducing the logistic, handling and disposal costs of the entire supply chain.

SMI has decades of experience, both in the construction of machines for the production of large capacity

containers, and in the design of bottles that meet the functional and aesthetic needs of customers.

Thanks to an advanced CAD centre for 3D design, SMI invests in innovative solutions to produce rPET bottles of all sizes and shapes, 100% recyclable, resistant, light and energetically "virtuous".

**Neck-in-bottle solutions**

SMI develops containers with an innovative design such as the "neck-in-bottle" stackable bottles, which, thanks to the particular shape of the hollow in the base, allow to:

- Optimise the space on the pallet
- Reduce packaging costs (no need for cardboard interlayers between layers)
- Reduce transport and storage costs, thanks to the greater number of bottles on each pallet
- reduce waste: bottle packages are subject to fewer breakages during palletising
- Improve the aesthetic appearance of the pallet, which is more compact and can have personalised graphics.

**Solutions for "tethered caps"**

The anchored caps, which remain attached to the bottle after being opened, will become an everyday object for European consumers from 2024, when the EU Directive 2019/904 comes into force. This new European Union measure establishes the minimum percentage of recycled material that must be present in plastic bottles used for bottling beverages (25% from 2025 and 30% from 2030); moreover, it states that the so-called "tethered caps" on PET and rPET bottles must remain attached to the container, so that they can be recycled together with the bottle, avoiding dispersion in the environment. Aware of the challenges that this new legislation poses to food and beverage manufacturers, SMI has studied a series of innovative solutions to produce rPET containers compliant with Directive 2019/904, supporting customers in choosing the type of bottle and tethered cap that best meets their specific needs.

